THE TREATMENT OF GONORRHŒA IN THE ARMY.

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THE TREATMENT OF GONORRHŒA IN THE ARMY.

By MAJOR H. C. FRENCH[1]

Royal Army Medical Corps.

THE important question of the treatment of gonorrhœa in the Army, from an efficiency point of view, is at the present time even more pressing than that of syphilis, owing to the larger number of cases of gonorrhœa as well as to the longer stay in hospital. Syphilis is now, as the result of systematised out-patient attendance and other factors, fairly well under control in large military stations (*vide* Appendices 1, 2). Appendix 1 shows the number of cases of gonorrhœa admitted to the Royal Herbert Hospital, Woolwich, in the five years 1903 to 1907 inclusive; and it will be observed that there is a marked reduction in the numbers in recent years. This is largely due to a considerably reduced number of admissions from relapse of gonorrhœa, as the result of more prolonged and thorough treatment in hospital in the early stages, and to later out-patient inspection. These factors are necessarily inter-dependent, and as the result of their application there is after a time, when control has been carefully exercised, a great diminution, not only of relapse of gonorrhœa but of venereal disease generally within a garrison. Further, the fact that the women in the neighbourhood are not so quickly infected or re-infected by diseased or partially treated soldiers, especially gonorrhœal cases, still further tends to a beneficial result, since a diseased woman commonly associates not only with an individual soldier, but also with his comrades. A certain class of soldier, it is well recognised, contracts fresh venereal disease over and over again, as a close examination of Medical History or Syphilis Case Sheets will soon reveal; and special provision should be made for these men.

Acting on the experience suggested by the study of syphilis whilst at Woolwich in the years 1905 to 1908, in a garrison of some 5,000 troops, I have exercised since July, 1907, a more systematic control over gonorrhœal patients, and supervised them for a month on discharge from hospital, with the result that whereas in the year 1907 there were 195 cases of gonorrhœa with 2 cases of relapse, yet in the last three months of 1907 there were only 37 cases of gonorrhœa with no cases of relapse amongst the local troops, and only 24 cases admitted during the first three months of 1908 with no relapse. (*Vide* Appendix 7.)

On September 17th, 1907, the Guards' Hospital at Rochester Row, London, was closed, and all the gonorrhœal patients from the London garrison (4,000 strong) were sent to Woolwich. From September 17th, 1907, to December 31st, 1907, 185 cases of gonorrhœa were sent for in-patient treatment. In the period January 1st, 1908, to March 31st, 1908, only 94 cases were sent (none being admitted in London). In dealing with London troops, however, I was unable to arrange in the case of gonorrhœal patients for the scheme in existence at Woolwich to be carried out; there were, consequently, numerous relapse cases, namely, 22 in the period September 17th to December 31st, 1907, 8 being transferred on September 17th, 1907, when the hospital in London was closed, and 22 in the period January 1st to March 31st, 1908. This is explained later in dealing with relapses, and was commonly due to hard military exercise immediately on discharge from hospital. The cases are given in Appendix 7. Out-patient supervision, besides minimising the number of re-admissions for relapse, naturally tends to reduce the frequency of intractable gonorrhœal complications, such as stricture, arthritis, and orchitis, which necessitate hospital treatment for several months, and commonly lead to invaliding, either as the direct result of the complication itself or of other diseases indirectly arising from it.

As it is necessary in the Army to admit men into hospital in the acute early stage of gonorrhœa, I first give a *résumé* of the in-patient routine practised at Woolwich during the years 1905 to 1908, which, I think, will conclusively demonstrate that gonorrhœa is not so quickly cured as some persons imagine, but that the treatment of this disease is fraught with great difficulty, and is of vast importance in military life, where the conditions materially differ from those existing in civil communities. As far as the Army is concerned, administrative methods and system appear to be the two chief factors in prophylaxis. I consider that cases of gonorrhœa in hospital should be marked "bed" during the early acute stage: that is, about seven to ten days, according to the nature of the discharge. Milk or farinaceous diet, with five pints of barley water, porridge and cocoa as extras, should be given. During this period free saline purgatives are administered every morning, and mist. alkaline [1] every four hours. No injections or

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[1] ℞ Potass. nitras ... ... 1 ounce.
Potass. bicarb. ... ... 10 drachms.
Tinct. hyoscyami... ... ... 10 drachms.
Infusum buchu. ... ... 2 pints.
Dose, 1 ounce three times daily.

irrigations are given. This dietetic and sedative line of treatment usually prevents chordee and pain, and guards better against systemic infections, such as myalgia, septicæmia, and gonorrhœal arthritis, with or without effusion, and protects against intractable complications, such as prostatitis and epididymo-orchitis, due to backward extension. After ten days, on an average, under this treatment, the previously creamy, yellow, purulent discharge becomes thinner, whiter, and muco-purulent. The man may then be marked "up" and his diet changed to convalescent. Alcohol, spices, and much meat prolong the duration of discharge. Cases of gonorrhœa should not be treated in syphilis wards, nor syphilis in gonorrhœa wards. The rules framed in Appendix 3 tend to guard against initial neglect and ignorance in the acute stage by patients or orderlies, factors which cause complications necessitating a much longer stay in hospital. Venereal wards should be constructed with an adjacent small ward, so as to allow of the isolation and separate treatment of married and well-conducted soldiers of long service, severe cases, and non-commissioned officers. At large military stations a separate room, fitted with an electric light, bath, and increased ablutionary arrangements, is essential, also a dark room for venereal eye cases who are nursed by male orderlies.

On admission to hospital, after microscopical examination of the purulent discharge and in order to verify the diagnosis of gonorrhœa, the urine of each man should be subjected to Thompson's two-glass test daily, and the diagnosis of anterior or posterior urethritis, as the case may be, is made from this rough clinical test before irrigations are performed (*vide* Appendices 4 and 5). The "first" morning urine is passed, half into one glass, half into the second. The glasses are labelled 1 and 2. The urine in certain cases is passed in the presence of an orderly, and can be kept, if necessary, in the ward annexe to stop deception, such as substitution by the patient of a "normal" urine, or the addition of water. Fraud can be detected by the colour, specific gravity, and consistence of the urine exhibited. If the urine in No. 1 glass (*i.e.*, the first passed) is "cloudy," and that in No. 2 glass is "clear," the case is one of anterior urethritis, the gonorrhœal case sheet (Appendix 4) is thus marked, and irrigations for anterior urethritis are commenced. If the urine in No. 1 glass is "clear" and that in No. 2 is "cloudy," the case is one of posterior urethritis, the case sheet is marked "posterior," and irrigations for posterior urethritis are commenced as soon as acute

symptoms have subsided, but these are not ordinarily advised under four weeks. Should cystitis or epididymo-orchitis threaten or occur, injections or irrigations should entirely cease. Sub-acute cystitis or prostatitis may be recognised by the "ropy" appearance of the urine, with large deposit, or by blood in the urine (smoky) in the second glass; if the cystitis or prostatitis is acute, blood is found in the urine in both glasses. Pain over the region of the bladder is usually complained of, but is relieved by fomentations every two hours.

"Anterior" irrigation commences in average cases about the sixth day, unless orchitis, cystitis, or other contraindication is present. Anterior irrigations, one pint at a time, can be employed two or three times daily; but posterior (which enter the bladder) are naturally much more severe, should be more cautiously employed, and never more than once a day, preferably in the morning. An "anterior" irrigation (half a pint), to wash out the anterior urethra, is first made before giving a posterior irrigation (half a pint). It is usual in posterior cases to give a second anterior irrigation in the afternoon. In selected cases a man should carefully syringe in the intervals, or be more frequently irrigated.

Silver salts, although advocated by many writers, are apt to cause cystitis, and should not, I consider, be used until the "gleet" stage in the third or later weeks; but the advantages of these salts are, in my opinion, theoretical rather than of practical value, and they are also very expensive. My predecessor (Lieutenant-Colonel Eckersley) abandoned them, I understand, owing to the frequency of orchitis and cystitis; I resumed, and later abandoned them for the same reason. They should, I think, be limited to "anterior" irrigations or injections in the later stages in experienced hands. Gonorrhœa, in average cases, like syphilis, has a natural tendency to resolve, quite apart from treatment, if irregular habits are not indulged in, the case dieted, and alcohol stopped in most cases. Silver salts are apt to be credited with the success primarily due to nature, *i.e.*, phagocytosis, as later explained. Anterior zinc irrigations are useful in the gleet stage.[1]

The irrigations are performed by a trained orderly under the direction of an officer. Kolman's dilator may be used in chronic cases. This instrument dilates the urethra and stretches the mucous crypts, and permits the free gonococci and pus organisms

[1] ℞ Zinc sulphate 2 per cent. ... ... 1 ounce.
Aqua ... ... ad 1 pint.

to be washed out of the crypts. A solution of permanganate of potash, 2 grains to 1 ounce and 1 ounce of this to every pint of lukewarm water (98° F.), is ordinarily used as an irrigation. The strength, therefore, is $\frac{1}{10}$ grain to 1 ounce. The strength can be increased later. About 8 pints of the solution are placed in a large measured glass receptacle, which is hung on the wall about 8 feet from the ground, the solution coming through an india-rubber tube affixed to the bottom of the glass receptacle. The distal end of the rubber tubing is fixed to a Maiocchi's "double channel" irrigation glass nozzle. The orderly sits on a stool opposite the patient, and inserts the point of the glass nozzle just inside the urethra. Over the penis is a mackintosh apron to direct the fluid into a bucket. The orderly should wear india-rubber gloves. The glass nozzle of the irrigating apparatus is sterilised before use, and should be disinfected by dipping in 1 to 20 carbolic lotion between the cases. After posterior irrigation the patient empties his bladder and shows the fluid passed. It will be noticed that as the case improves the colour of the permanganate of potassium solution is retained. The apparatus is obtainable at the Army Medical Stores, Woolwich, viz. large urine glasses, two per man (cost 4½d. each), large irrigator vessels, Maiocchi's double channel nozzle, and india-rubber tubing. Mackintosh aprons are supplied from barrack stores.

After the urethral discharge has ceased, the urine, as evidenced in the urine glasses, gradually becomes clear, and threads, in average cases, are no longer visible after six weeks. The man is then placed on beer for three days, and if the urine still remains clear and the gonococcus is not demonstrated by the microscope, he is dismissed from hospital when ten to fourteen days free from suppuration; but never under six to seven weeks if admitted with acute gonorrhœa (*vide* Appendix 4). This time-limit better guards against further medical inefficiency from relapse or swollen testicles, on return to military duty, more especially in mounted units. A copy of instructions for irrigations (Appendix 5) should be placed both in the hospital ward and also in the irrigation room for the information of soldiers and orderlies. The rules in Appendix 5 are those at present in force at the Royal Herbert Hospital, Woolwich; they are the practical outcome of personal experience in treating some 1,000 or more in-patients by irrigations during the past three years. Irrigations are more under medical control than injections by ignorant patients, but they need not supplant them, nor are they necessarily more reliable.

The only really scientific treatment which curtails the gleet stage in chronic cases is to illuminate the urethra by means of the electric urethroscope, any time after the twentieth day of disease, and use local applications of argent. nit. to the granular patch, which is present at some time in some degree in every case of freshly contracted gonorrhœa. This patch, in the absence of prostatitis, usually causes the persistence of the glairy gleet, and may give rise to stricture. By means of the urethroscope, with practice, it is quite feasible to detect the presence of the exquisitely tender granular patch. If the urethra is unduly sensitive at any one spot on the passage of the instrument, or of a No. 10 olivary catheter, one is then quite certain that the gonorrhœa is not cured. In the case of a normal urethra, there is no pain or discomfort on the passage of a medium-sized instrument. In cases of gleet the passage of a large-sized catheter is often of value. In a diseased urethra the granular patch is usually situated within 4 inches from the meatus urinarius and on the floor of the urethra. In cases of prolonged gleet a careful examination should be made for stricture and for enlarged prostate. If the latter condition exists, massage of the prostate has been suggested, and iodide of potassium is sometimes of benefit. Before a case of gonorrhœa is discharged from a military hospital a careful examination of the meatus urinarius should be made. If the meatus is red and glazed, discharge is present in despite of the man's assertion to the contrary with a view to getting out of hospital and so avoiding loss of pay. If the man denies the presence of discharge, swab the urethra with a piece of cotton wool and examine for gonorrhœa, or centrifuge the urine and examine for gonococcus, which is the more exact method. The groin should be examined for tenderness, or possible glandular enlargement, and the testicles and epididymis for tenderness, or possible epididymo-orchitis. The urethral mucous membrane should be closely examined by the urethroscope to see whether the granular patch on the floor has resolved. Failing the possession of this instrument, a black vulcanite urethral cannula with sharp edge and solid interior plug, which can be withdrawn, can be obtained from the Ichthyol Company, High Holborn, London. I used it in India for many years ; it is a simple means of localising the granular patch and topically treating it in the absence of the urethroscope. This vulcanite instrument is simply a copy of the metal tubes used with the urethroscope.

Remarks.—I do not concur in the view put forward by Major

Pollock, R.A.M.C.,[1] that irrigation in the initial acute stage of gonorrhœa prevents the posterior urethra from becoming infected. I consider that, although gonorrhœa is a specific inflammatory catarrh, chemical irrigations or injections in the early stage, so far from preventing, are very liable indeed to cause infection of the posterior urethra, and in the very *acute* stage are probably quite the most common cause of undesirable complications, such as epididymo-orchitis, cystitis, urethral fever, and systemic infection. Notes could be given of very many cases. Thompson's two-glass test shows that subsequent to irrigation the posterior urethra has been involved, whereas it was not so before. Rest in bed, milk diet, hot baths, hot compresses, sedative alkaline mixtures, free saline purgation, and in military hospitals an absence of fatigues in the very early stages are much more reliable remedies in preventing backward extension and intractable complications.

I have tried extensively, during the past fifteen years, most known methods amongst some 5,000 in-patients, but in the initial "acute" stage have long abandoned chemical irrigations and injections in favour of more conservative methods, and with the best results. I consider, especially when dealing with ignorant patients, that it is a retrograde step in our knowledge to unduly interfere with an intensely inflamed urethra in the very early stages, either by instrumentation or chemical injections or irrigations, which often act like instrumentation, and give rise to urethral fever and its adverse sequelæ. I claim no originality for this opinion, as it is, I believe, supported by the experience of the profession at large and conservative medical opinion. The posterior urethra is not uncommonly affected at the time a patient reports sick, and the not infrequent presence of epididymo-orchitis at the time of admission to hospital is usually due to exercise or delay in reporting sick, owing to concealment, or to injection at the local chemist's. Facts such as these preclude routine irrigations or injections until the case is more closely studied. Hence the importance of a few general instructions as given in Appendices 3, 4, and 5. After epididymo-orchitis or cystitis has been present, if chemical injections or irrigations are used too soon, severe relapses of the former condition very often ensue, and these conditions commonly mean a stay in hospital for three months before the man is fit for military duty; whereas, if complications do not ensue or persist, a man should be quite fit,

[1] Advisory Board Final Report on the "Treatment of Venereal Diseases in the Army," page 15.

as later explained, to attend as an out-patient, remaining in barracks on light duty, or excused duty, after six weeks in average cases. The fact, moreover, of the testicles swelling as the result of too early and vigorous irrigation in hospital is apt, in the eyes of the patient, to discredit the treatment, the last thing to be desired in the Army, where soldiers, owing to financial and personal considerations, are only too ready to resort to quacks and chemists. Discredit is thus unfairly thrown on irrigation, which, with limitations, is an advance on the injection treatment. I have tried, and have seen used, all the ordinary chemical injections and irrigations, and favour, once the acute symptoms have abated, warm water to commence with, followed by potass. permang., in dilute solution $\frac{1}{10}$ grain to 1 ounce as an irrigation, and $\frac{1}{2}$ drachm to two pints of water as an injection, the strength being increased in the gleet stage.

The reason why injections and irrigations necessarily fail to more appreciably curtail the total duration of gonorrhœal discharge, even amongst in-patients, is presumably due to the pathological fact that the gonococci, besides being taken up by the leucocytes as a result of phagocytosis, also effect an entry into the urethral submucous connective tissue, and give rise later in the gleet stage to the granular patch. The superficial mucous crypts in the urethral lining membrane no doubt also lodge the gonococcus; but the persistence of gleety discharge is probably due to the minute though definite *infiltration* (granular patch) in the submucous coat, which only slowly proliferates and slowly resolves, and in neglected chronic cases, or as a result of several attacks, gives rise to a thickening or a definite stricture. Irrigations, injections, and diuresis in muco-purulent stages wash away the accessory pyogenic organisms, pus corpuscles, and some of the free gonococci, but could not possibly remove gonococci embedded in the tissues until sufficient time has elapsed for exfoliation of the surface epithelium, which occurs naturally during the course of resolution of the localised inflammation. This observation is further borne out by the recognised clinical fact that cases of stricture are commonly found in association with a prolonged gleety urethral discharge, and the passage of a full-sized catheter will in some instances hasten the cure of a gleet by temporarily setting up a more acute local reaction and discharge. There is also a resilient slight enlargement of the inguinal lymphatic glands in some cases of gonorrhœa, and the leucocytes containing gonococci can thus gain an entry into the blood-stream and give rise to

constitutional symptoms, such as anæmia, arthritis, fever, or generalised septicæmia. Hence the scientific treatment of resistant cases in the unduly prolonged " gleet " stage, which guards against complications, is that so ably described by Mr. Burghard,[1] viz., by means of the electric urethroscope, and local applications to the granular patch of a strong solution of argenti nitras (20 to 30 grains to the ounce.).

A large number of gonorrhœa cases, of course, naturally get well after five to seven weeks without any local treatment. This is what we would expect of a localised inflammatory process, provided we prevent a generalised septicæmia occurring by rest, dietary, diuresis, and sedative measures in the initial acute stage, and careful irrigation or injection later. In average cases undue interference with the urethra by too strong local applications is not advocated; they, no doubt, can temporarily cure the gonorrhœa, but may later give rise to stricture. It is a different matter where the prolonged gleet is already in association with a large granular patch, as this shows that a stricture or considerable thickening is inevitable. Carefully safeguarded irrigations performed by a trained person are necessarily more efficacious in the " muco-purulent and gleet stages " (*i.e.*, later stages), than routine injection practised by an ignorant patient. After the third week, the frequency, time, and manner of irrigation or injection, and not the chemical nature of these, are no doubt dominant factors in curtailing the discharge in average cases if the phagocytic power is normal. I pursued investigations in India, in 1900-1901, extending over some hundreds of cases where no injection or irrigation was ever used. I was astonished at the infrequency of complications, and the ordinary duration of urethral discharge was about six weeks; but as this was before the days of out-patient attendance the question of later relapse could not then be studied.

I believe that at the Guards' Hospital, London, a similar series of investigations was conducted twelve years ago by Colonel Fenn, R.A.M.C., at the instance of Mr. G. Lenthal Cheatle, and the latter informed me that the duration of urethral discharge averaged about five weeks or so. As the question of later relapse is not dealt with, this does not imply cure, as at this period of five weeks even in hospital a urethral discharge frequently stops for some days and then returns. Of course one is met with the admitted fact that

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[1] *King's College Hospital Annual Reports*, vol. ii.

there are prolonged cases of gleet that last much longer, and that threads may be seen in, or gonococci may be recovered from the urine, after three months or longer; but in some cases only pus corpuscles, and not gonococci, are found. I cannot admit that irrigation, even for several months, does much good in many of these prolonged cases, although it has been advocated as a universal panacea. It is in this class of case, or in the case of men who frequently contract gonorrhœa, that stricture not uncommonly results. There is often a history of several previous attacks of gonorrhœa. In some of these cases the urethral discharge persists for fourteen weeks or longer, despite most carefully supervised irrigation (including silver salts) and in-patient hospital treatment. Naturally, when a posterior urethritis or epididymitis has occurred, the average duration is ordinarily much longer (eight to twelve weeks on an average) than in uncomplicated anterior cases (five to seven weeks), so that it behoves us to prevent, if possible, the occurrence of these conditions. I consider this is best done by ensuring that the man reports sick early, before his testicles swell, and that he is first treated in hospital. If a soldier with gonorrhœa only reports sick when his testicle is swollen and he is consequently unable to walk, he ought to be "crimed" with concealment by the medical officer signing the sick report. The disease has probably been in existence seven to ten days, and the chemist has failed to cure him. I have used, and have seen extensively used, urotropin and salol as urinary disinfectants, but, like silver salts, the advantages in practice are not so obvious as well advertised, and barley water, by increasing diuresis, effects excellent results. Tonics, particularly quinine and iron, improve the anæmia ordinarily present in the later phases of gonorrhœa, and, *ipso facto*, may curtail the duration of gonorrhœal discharge by increasing the phagocytic power of the individual. Recently antistreptococcus serum (polyvalent, Burroughs and Wellcome) is advocated for gonorrhœal arthritis. I have not as yet obtained any wonderful results in seven or eight cases I have tried it on—the result being commonly negative. An injection of 10 to 20 cc. is made *per rectum*.[1]

Relapse.—It not infrequently happens in military garrisons that men are admitted to hospital shortly after arrival at their station either with a relapse of gonorrhœa (*vide* Appendix 7), or with intractable gonorrhœal complications, such as stricture, epididymitis,

[1] No. 1189 *Medico-Chirurgical Transactions*, W. Soltau Fenwick and J. Porter Parkinson, M.D.

and orchitis, and more rarely with arthritis, or iritis, the result of systemic infection. Gonorrhœa is a potent cause of anæmia and debility, and, when excessive smoking and beer-drinking are superadded, of that typical affection of soldiers, "disordered action of the heart," which is responsible for much medical inefficiency, especially amongst British troops. Endocarditis may occur in the course of gonorrhœa, in conjunction usually with arthritis, or a generalised septicæmia; and I have seen endocarditis follow directly on gonorrhœal ophthalmia, and death result. If a man in the first instance is adequately treated in hospital for gonorrhœa, these complications are much less likely to occur. Many soldiers, however, go about with gleet for months, either as the result of concealment or too early discharge from hospital, and only report sick either when complications occur or when awarded punishment for military offences, when they often make use of it to evade sentence of court-martial, and experience demonstrates that they commonly succeed in their object. Treatment in hospital should continue for at least six weeks in the case of a man admitted with "acute" gonorrhœa, whether the man says the discharge has stopped or not, unless threads are not present in the urine and microscopic examination of the centrifuged urine shows an absence of the gonococcus, which is in the highest degree unlikely within the above-mentioned period. There are four advantages in the above minimum time-limit procedure. (1) From the exact and recorded observation of many hundreds of cases, cessation of the urethral discharge is commonly effected. (2) Relapse cases more rarely occur in average cases, especially when cases are followed up, as later explained, on discharge from hospital, and this quite apart from the fact whether injection or irrigation is or is not used in freshly contracted cases. (3) The occurrence of the previously mentioned complications is lessened, or can be more adequately dealt with, and so the number of re-admissions is reduced. This ultimately reduces time in hospital, minimises loss of efficiency, and reduces invaliding. (4) The "disciplinary" restriction, if concealment is frustrated, which it can be by properly directed effort, is beneficial in two ways. Many men, unless shortly due for the Army Reserve, when they become free patients, wish to get out of hospital to avoid loss of pay. Consequently, when thorough treatment for six weeks is ensured, they are not so liable to expose themselves again, if prevented from leaving hospital just when it suits their convenience. Hospital fatigues, however, in large military garrisons, should not be so exclusively done by venereal patients.

Fatigues in the acute stage of gonorrhœa, such as scrubbing floors or other heavy work, cause complications such as buboes or swollen testicles, which mean a three months stay in hospital, and may also tend to promote concealment of disease before admission, which it is highly desirable to prevent, not only from the efficiency point of view, but also from financial considerations. If cured, men cannot make use of a gonorrhœa to evade punishment. A gleet or chancre is a valuable asset to a certain class of soldier desirous of evading the result of his irregularities, viz., punishment.

Finger, of Vienna, considers that six weeks is the average period of gonorrhœal discharge, and that injections do not curtail this period. I am of opinion that six to seven weeks is the rule amongst in-patients in uncomplicated cases, whether locally treated or otherwise. It is a common practice in many military hospitals in England and the Colonies to discharge patients from hospitals within three to four weeks of admission with an acute urethral discharge; when this is done and the soldier is sent to duty, relapse occurs in the majority of instances and the man may not bring it to notice. When acute relapse occurs the case should be at once sent for treatment in hospital to guard against complications, debilitating anæmia, and the infection of others, but morning drop (*la goutte militaire*, "tear in his eye" of sailors) can be safely and adequately dealt with by out-patient treatment. A gonorrhœal case sheet (*vide* Appendix 4), when properly kept up, gives very material assistance in estimating the cause of relapse, or of intractable complications, such as bubo, in the case of gonorrhœa complicated by balanitis or by venereal sores, and of epididymo-orchitis, bubo, and gonorrhœal rheumatism in the case of gonorrhœa. Cases of gonorrhœa complicated by the occurrence of arthritis, epididymo-orchitis, or anæmia, should, on discharge from hospital, be kept under special observation for disordered action of the heart, or endocarditis. A notification on Army Form I, 1239 (Appendix 8), should be sent to the medical officer in charge of the barracks, or to the nearest military hospital if the man is on furlough. The above complications indicate a constitutional infection, and are usually associated with fever at the onset, and later with severe and often prolonged debility and anæmia, which predispose to other diseases. This in many instances, more especially at foreign stations, permanently incapacitates the men, and renders invaliding necessary. Further, when it is considered that gonorrhœa is the commonest cause of "sterility" both in the male and female, that iritis may cause permanent damage to the eye, that ophthalmia

neonatorum results from it in infancy, and that gonorrhœal arthritis often leaves permanently stiff and useless joints, the importance of obtaining accurate knowledge of these complications cannot be over-estimated. Permanent adhesions usually form when arthritis or iritis is inadequately treated. The prognosis, however, is ordinarily good, if the case is seen early, dieted, and well treated in hospital.

On discharge from hospital, soldiers can attend daily for a week under the provisions of paras. 1,080 and 1,174, King's Regulations, 1908 (Appendix 6). They remain in barracks, keep a perchloride dressing on the penis, even in the absence of obvious signs of urethral discharge, and are not allowed in the canteen. They can thus continue treatment on light duty, or be excused duty until physically fit for hard military exercises. After a week they can be inspected weekly for a month, and then discharged. By these means relapse is kept well in hand in large military stations, and inefficiency enormously reduced. Such procedure tends to prevent the infection of women in the neighbourhood and the consequent re-infection of the soldier's comrades in the garrison, as explained in the introductory remarks.

A strict record (Appendix 7) was kept at Woolwich during 1907 of all cases of relapse of gonorrhœa occurring within thirty days of discharge from hospital in a garrison some 5,000 strong, the men being inspected on discharge from hospital. There were 195 cases of gonorrhœa admitted to hospital in 1907, and only two cases of relapse, although most of the troops are mounted. During the first three months of 1908 there were twenty-three cases of gonorrhœa with no relapse. In Appendix 1 the ratio of gonorrhœa at Woolwich over a period of five years is shown with average daily sick. The reduction in numbers since 1903 is due to systematised effort, to a lessened number of relapse cases swelling the admission ratio, to careful treatment in the earlier acute phases of gonorrhœa, and, in 1907, to rigid inspection on discharge from hospital under the provisions of paras. 1,080 and 1,174, King's Regulations (Appendix 6). On September 17th, 1907, Rochester Row Hospital, London, was closed, and all gonorrhœa cases were sent to Woolwich for admission and treatment. Between September 17th and December 31st, 1907, there were 185 cases of gonorrhœa admitted to the Royal Herbert Hospital, Woolwich, twenty-two of these cases being due to relapse (eight of these twenty-two relapse cases having been transferred on September 17th, 1907, when the hospital in London closed).

During the first three months of 1908 there were ninety-five cases of gonorrhœa sent from London, twenty being relapses. The excess of relapse amongst London troops is due to the fact that the cases of gonorrhœa, on discharge from hospital, were not made to attend daily for a week on light duty, or excused duty under the provisions of paras. 1,080 and 1,174, King's Regulations (Appendix 6), when treatment can be continued even in the absence of obvious signs of urethral discharge, with weekly observation for a month, as explained. It appears to be a simple matter to arrange that throughout the British Army this should be thoroughly done; the excessive inefficiency arising from gonorrhœal complaints would then be lessened considerably. The causes of relapse, according to the statements of the soldiers so suffering, were: Firstly, hard military exercise, often on the very day after discharge from hospital—such as route marches, gymnastics, physical drill, riding, &c.; secondly, beer-drinking; thirdly, renewed association with loose women.

In the case of men who have swollen testicles during their stay in hospital, such factors as the above rapidly cause a recrudescence of disease. Soldiers, whilst actually under treatment for syphilis, and who have been recently placed on the Syphilis Register, frequently contract gonorrhœa. The dual complaints are difficult to treat, and give rise to great debility, anæmia, and much medical inefficiency.

Quite apart from the humanitarian aspect, it would appear that the interests of discipline would be better maintained in the case of prisoners suffering from venereal diseases if a regulation directed that all such cases in the first instance are to be invariably admitted to hospital and not first sent to prison, such time as is thereby lost being made up in prison on recovery. This procedure would, it is believed, absolutely prevent concealment, commonly practised by soldiers with the ulterior view of evading awards of courts-martial, and discipline would be more adequately safeguarded. Hard labour, defaulters' drill, and physical exercises will rapidly induce relapse or epididymo-orchitis, and prison life and food will markedly accentuate the debility and severe anæmia that ordinarily occur in the course of gonorrhœa and syphilis. Soldiers confined to barracks for slight breaches of discipline are not medically examined under the regulations prior to the award of punishment. They should be examined, and, if treated in hospital, the days of confinement to barracks should be made good on discharge; or, when practicable, they should be treated as out-patients under paras. 1,080, 1,174, King's Regulations (Appendix 6).

The most prolonged and the worst cases of gonorrhœa, like syphilis, ordinarily result from initial neglect or treatment by the prescribing chemist. They cannot be adequately treated whilst performing hard military duty, and exposed to all weathers on sentry or other duty. Civil practitioners should notify cases of venereal disease to the military authorities, as on the Continent, since soldiers can only be temporarily treated under such circumstances; and the expense to the public is very considerably and quite unnecessarily increased by reason of a more prolonged stay in hospital, due to resulting gonorrhœal complications. Concealment of disease largely arises from misdirected financial penalties and indiscriminate punishment. No pecuniary punishment should be awarded except for concealment. There is not at present any systematised procedure in dealing with concealment in the Army. Reports are made only in a small percentage of cases, and the punishments are apt to vary even in identical cases. If concealment reports are to be regularly made on the sick reports by medical officers, the soldier should be more regularly warned in barracks by his Commanding Officer, and when one case of concealment occurs in a company, every man in that company should be medically inspected. Thorough weekly inspections of one or two companies at a time, instead of the whole regiment once a month, have been strongly advocated by many medical officers; such a procedure, it is believed, would make the individual unit take greater interest in the matter, and would act as a check against concealment practised in order to avoid a loss of proficiency, or corps pay, whilst undergoing treatment in a military hospital.

When we consider that some 30 per cent. of all diseases in the British Army are due to venereal complaints, it appears to me that no stone should be left unturned in order to effect a further reduction in the immense amount of inefficiency arising directly and indirectly from these causes.

APPENDIX 1.

Annual Return of Venereal Cases.

Local Troops, Woolwich, 5 Years.

Year	Gonorrhœa				Syphilis				Soft Chancre				Strength of garrison
	Admissions	Average number of daily sick	Admissions : ratio per thousand	Average daily sick : ratio per thousand	Admissions	Average number of daily sick	Admissions : ratio per thousand	Average daily sick : ratio per thousand	Admissions	Average number of daily sick	Admissions : ratio per thousand	Average daily sick : ratio per thousand	
1903	325	28·27	59·24	5·15	477	54·38	86·97	9·11	84	6·13	15·31	1·15	5,484
1904	237	26·71	44·62	5·03	331	56·76	62·32	10·70	128	15·91	24·10	0·21	5,311
1905	167	20·61	33·83	4·23	202	30·30	41·49	6·14	55	6·18	11·07	1·24	4,966
1906	220	20·41	43·18	5·18	129	13·85	25·12	2·72	43	3·25	8·44	0·64	5,096
1907	195	29·16	41·45	6·18	87	12·79	18·50	2·71	97	10·98	20·63	2·33	4,702
London Cases (Guards' Hospital closed September 9, 1907).													
1907	202				42				35				

Remarks.—In October, 1905, the treatment of "Syphilis in-patients" by inunctions of ung. hydrarg. was commenced in place of insoluble grey oil (Lambkin's formula).

APPENDIX 2.

All Venereal Diseases. *Local* Troops.

Total in-patients and out-patients remaining at the end of each month at the Royal Herbert Hospital, Woolwich.
To show the effect of medical control and out-patient treatment.

Date	In-patients, "all venereal diseases," including venereal sore cases awaiting diagnosis	Out-patients, syphilis	Average strength of garrison
1907			
July 31	66	105 (venereal sore, 15)	4,938
August 31	17	120 (,, ,, 18)	3,536
September 30 ..	26	86 (,, ,, 3)	4,350
October 31.. ..	19	67 (,, ,, 1)	4,131
November 30 ..	27	65 (,, ,, 1)	4,087
December 31 ..	23	55 (,, ,, 5)	4,097
1908			
January 31 ..	21	61 (,, ,, 2)	4,217
February 29 ..	26	54 (,, ,, 3)	4,317
March 31	25	57 (,, ,, 1)	4,462
April 30	21	57 (,, ,, 2)	4,402
May 31	28	53 (,, ,, 2)	4,329

"Venereal sore" is a term used in the Army for cases awaiting the diagnosis of soft chancre or syphilis.

APPENDIX 3.

Instructions for Gonorrhœa Patients.

(1) Cases on admission will have their temperature taken and take a hot bath. In the case of after admissions, two No. 9 pills will be given, and mist. alba 1½ oz. in the morning, and mist. alkaline 1 oz. three times daily pending instructions from the medical officer.

(2) Cases of relapse of gonorrhœa re-admitted to hospital within a month will be recorded as such on their diet sheets in red ink.

(3) Two hip baths are kept in each ward for use of special cases as ordered by the medical officer.

(4) Lint soaked in 1 in 2,000 perchloride of mercury lotion is cut up and placed in a basin in the w.c.'s for all patients that are marked "up"; a bucket is provided for the dirty lint. The orderly will issue lint soaked in the above lotion to all cases marked "bed" six times a day. The patient must be careful that he does not touch his eyes with the discharge, or he may lose his sight.

(5) The above instructions will be read over to each patient *on admission* by the orderly in charge of the ward.

APPENDIX 4.

Gonorrhœal Case Sheet.

Reg. No.	Rank and Name		Corps	
Admitted			Discharged	
Date	Anterior	Posterior	Treatment	Remarks

In the "Anterior" and "Posterior" columns record the condition of the urine as estimated by Thompson's two-glass test.

On admission note in remark column: (1) whether first attack, relapse, or fresh contagion; (2) complications, such as orchitis, arthritis, &c.; (3) acute or sub-acute discharge, or glairy gleet.

On discharge from hospital.—Note number of days free from urethral discharge after giving beer for three days. Examine for stricture or tenderness of urethra. Relapse necessitating re-admission to hospital commonly occurs if cases admitted with acute gonorrhœa are discharged to military duty under six to eight weeks. Cases can attend for a week under the provisions of paragraphs 1,080, 1174, King's Regulations, 1908, and be inspected once weekly for three weeks.

APPENDIX 5.

Irrigations. Gonorrhœa Cases.

(1) Urine flasks are to be marked 1 and 2 on the neck of the bottle.

(2) The first morning urine of each man will be passed: first half into No. 1 urine flask, and the second half into No. 2 urine flask. The medical officer inspects the urine flasks at his visit, and they are washed out after the visit, but not used again until the following morning. On Sundays the urine flasks will not be used unless specially ordered. A cloth is kept in the lavatories for wiping out the flasks.

(3) The orderly doing the irrigations will take the medical officer's instructions from the "Gonorrhœal Case Sheet" for each patient, which is kept with the diet sheet. Before commencing each irrigation he will ask the patient whether there is any pain, or inconvenience, caused by the irrigation, and will see that he first passes his urine. Patients with acute gonorrhœa are not irrigated for some days. If ordered, they can gently syringe themselves with warm water.

(4) *Anterior* irrigation is for the anterior part of the urethra and does not enter the bladder. Permanganate of potash, 2 grains to the pint, at a temperature of 98° Fahrenheit, is to be used three times daily, at 6.30 a.m., 11 a.m., and 2 p.m. The quantity used is one pint.

Posterior irrigation enters the bladder, and before allowing it to do so the anterior urethra must first be washed out with half a pint of the potass. permang. solution, 2 grains to a pint, at a temperature of 98° Fahrenheit, and half a pint of the same solution is then passed into the bladder. The patient, after receiving the irrigation, empties the fluid into a glass and shows it. *Posterior* irrigation is only done once a day, unless specially ordered to the contrary.

(5) A large glass irrigator is placed 4 feet above the level of the chair on which the patient sits. The glass nozzle of the irrigator is to be sterilised before use, and must be disinfected after each case by dipping it into 1 in 20 carbolic lotion. Extra care is to be taken with patients suffering from syphilis as well as gonorrhœa. The orderly must wear india-rubber gloves.

(6) Special irrigations of zinc, argenti nitras, &c., according to the medical officer's instructions.

APPENDIX 6.

King's Regulations, 1908.

1,080.—Soldiers temporarily unfit, but for whom treatment in hospital is not essential, will attend at the hospital or inspection room as directed by the medical officer.

Soldiers attending hospital will not be permitted to leave barracks. According to medical recommendations, they will be relieved from all duties, or employed on light duties and fatigues (see also para. 1,174).

1,174.—Defaulters will be excluded from the canteen except during one hour only in each day, to be fixed by the Commanding Officer. Men attending hospital and convalescents doing light duty will be excluded from the canteen unless the written permission of the medical officer has been given

Extracts from "Royal Warrant for Pay," 1907.

Inefficiency.

999.—If a non-commissioned officer or man is rendered inefficient (physically), by reason of venereal disease, or its effects, or from the result of alcoholism, as certified by the medical officer, he shall forfeit service pay, whether Class 1 or Class 2, from the date, inclusive, from which such inefficiency became apparent, but he may have such class of pay restored to him on his return to ordinary duty from the date on which he is considered by his Commanding Officer to have regained his efficiency. (A medical certificate of regaining efficiency is no longer necessary.)

Extract from Station Orders.

Woolwich, September 10th, 1907.

1,235.—Medical. Soldiers attending as out-patients at the Royal Herbert Hospital should not be granted furlough unless recommended by the medical officer, and on their return should be sent up to the hospital for inspection. Commanding Officers will invariably notify the Royal Herbert Hospital when men become ineffective or leave the station.

APPENDIX 7.

Relapses of Gonorrhœa within a Month of Discharge from Hospital.

1907.

Regiment	Rank and Name	Remarks	Days intervening
1st Suffolk	Private C. ..	Originally treated at Woolwich..	4
126 Royal Field Artillery	Dr. K. ..	,, ,, ,,	14
1st Grenadier Guards..	Private R. ..	Originally treated in London and transferred from London	6
2nd Scots Guards ..	,, F. ..	,, ,, ,,	10
1st ,, ,, ..	,, G. ..	,, ,, ,,	31
,, ,, ,, ..	,, H. ..	,, ,, ,,	1
,, ,, ,, ..	,, M. ..	,, ,, ,,	2
1st Coldstream Guards	,, M. ..	Originally treated in London and transferred from London when Rochester Row closed, September 17, 1907	25
,, ,, ,,	,, R. ..	,, ,, ,,	25
1st Scots Guards ..	,, W. ..	,, ,, ,,	14
,, ,, ,, ..	,, S. ..	,, ,, ,,	26
1st Coldstream Guards	,, B. ..	,, ,, ,,	20
1st Grenadier Guards..	Lance-Corpl. F.	,, ,, ,,	30
2nd Scots Guards ..	Private K. ..	,, ,, ,,	23
2nd Grenadier Guards	,, T. ..	,, ,, ,,	23
,, ,, ,,	,, Y. ..	Direct admissions from London; originally treated at Woolwich	26
1st Coldstream Guards	,, H. ..	,, ,, ,,	26
2nd Grenadier Guards	,, M. ..	,, ,, ,,	8
1st Scots Guards ..	,, C. ..	,, ,, ,,	29
1st Coldstream Guards	,, C. ..	,, ,, ,,	3
,, ,, ,,	,, L. ..	,, ,, ,,	14
,, ,, ,,	,, W. ..	,, ,, ,,	2
1st Scots Guards ..	,, C. ..	,, ,, ,,	1
2nd Grenadier Guards	,, L. ..	,, ,, ,,	1

1908.

DIRECT ADMISSIONS. CASES ORIGINALLY TREATED AT WOOLWICH.

Regiment	Rank and name	Days intermitting
1st Coldstream Guards	Private L...	17
2nd Grenadier Guards	Lance-Corporal J.	4
2nd Coldstream Guards	Private B...	4
,, ,, ,, ...	,, G...	23
1st Scots Guards	,, W.	27
Irish Guards	,, N...	3
1st Scots Guards	,, C.	29
2nd Grenadier Guards	,, W.	15
A, Royal Horse Artillery . ..	Gunner P...	5
Irish Guards	Private Q...	1
2nd Grenadier Guards	,, B...	2
1st Coldstream Guards	Lance-Corporal W. . ..	27
1st Scots Guards	Private A...	9
Irish Guards	,, C...	1
,, ,, ...	,, F.	12
,, ,, ...	,, N.	28
1st Coldstream Guards	,, S...	18
2nd Grenadier Guards	,, H.	2
1st Scots Guards	,, P.	7
,, ,, ,, ...	,, W.	9

Remarks.—In 1907 there were 195 admissions for gonorrhœa in the local garrison at Woolwich (average strength, 4,702), and two cases of relapse in the whole year. No relapses to April, 1908. In the last three months of 1907 there were 185 admissions for gonorrhœa from the London garrison (4,000 strong), and 22 cases of relapse (eight of these being transferred on September 17, 1907, when Rochester Row Hospital closed). In the first three months of 1908 there were 95 cases of gonorrhœa sent from London to Woolwich, 20 being cases of relapse.

Army Form I., 1,239.

APPENDIX 8.

FORM to be used (1) when a Soldier is placed under Medical Surveillance for Venereal Disease ; (2) for furnishing information between Medical Officers when cases are transferred from one station to another.

Corps	Company	Regimental No.	Rank and Name	* Date on which case originally came under treatment
				REMARKS

To_____

Station and date_____

The Officer who places the man under surveillance will prepare this form in duplicate. One copy will be forwarded to the Officer Commanding, and the other to the Medical Officer who will have the surveillance of the man. When any circumstances arise likely to interfere with the regular attendance of men on the continued treatment list, such as transfer to another station, musketry courses, imprisonment, and especially furlough, their Commanding Officer will apprise the Medical Officer of the fact.

* When cases are transferred Medical Officers will be careful to insert the date on which the case was first placed on a syphilis register, irrespective of the number of registers the case may have passed through